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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/555,816	10/10/2000	Tomas Nordstrom	192538US2PCT	9460

7590 01/14/2004

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EXAMINER
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HOFFMAN, BRANDON S

ART UNIT	PAPER NUMBER
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2136

DATE MAILED: 01/14/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/555,816

Applicant(s)

NORDSTROM ET AL.

Examiner

Brandon Hoffman

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2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 24-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

1. Claims 1-23 have been cancelled in this office action, claims 24-46 are newly added.
2. Applicant's arguments filed December 30, 2003, have been fully considered but they are not persuasive.

### *Priority*

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 103*

5. Claims 24, 25, 27-29, 31-34, 36-38, 40-42, 44, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannering et al. (U.S. Patent No. 6,137,839) in view of Kloker (U.S. Patent No. 4,539,684).

Regarding claims 24, 28, 32, 33, 37, and 41, Mannering et al. teaches:

- A multi-carrier transmission system that contains, on the transmitter side (figure 4A, top half), an IFFT, parallel to serial converter, and a digital to analog

converter; and on the receiving side (figure 4A, bottom half), an analog to digital converter, serial to parallel converter, and a FFT (figure 4a). These parts of the multi-carrier transmission system exist in the teaching of Mannering et al. and are the same pieces in applicants drawing as to what a multi-carrier transmission system entails.

Mannering et al. does not teach:

- A data scrambler,
- Characterized in that combiner means are provided to combine user data with frame synchronization data.

Kloker teaches:

- A data scrambler (figure 3),
- Characterized in that combiner means (figure 3, reference number 28) are provided to combine user data (figure 3, reference 'Input Data Sequence') with frame synchronization data (figure 3, reference number 26).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the data scrambler, as taught by Kloker to the multi-carrier transmission system of Mannering et al. It would have been obvious for this combination because a data scrambler incorporated into a multi-carrier transmission

system that uses the sync bits as part of the scrambling minimizes the size of the transmission data (see column 1, lines 39-46 of Kloker).

Regarding claims 28 and 41 specifically, **official notice** is taken that it is well known in the art of scrambling that the process performed on the scrambling side (transmitting side) is the reverse process of that performed on the descrambling side (receiving side). With that said, claims 5 and 18 are rejected based on the well known fact that scrambling and descrambling are mirrored processes of each other.

Regarding claims 25, 29, 38, and 42, Mannering et al. as modified by Kloker teaches the combiner means has a XOR function (see figure 3, reference number 26 of Kloker).

Regarding claims 27, 31, 40, and 44, Mannering et al. as modified by Kloker teaches said combiner means is adapted to combine said user data with the two most significant bits of a synchronization frame (see figure 3 of Kloker).

Although Kloker does not teach combining the first two significant bits of a synchronization frame with user data, it is a mere choice of the applicant to choose these specific bits. In operation, the choice of any combination of bits of the synchronization frame for scrambling would produce similar results.

Regarding claims 34 and 45, Mannering et al. as modified by Kloker teaches the multi-carrier transmission system employs DMT (see figure 4a and column 3, lines 3-10 and Table 2 of Mannering et al.).

Regarding claim 36, Mannering et al. as modified by Kloker teaches a means for transmitting frame synchronization data from said data scrambler to said data descrambler (see figure 3 of Kloker).

The transmission system of Mannering et al. as modified by Kloker includes a scrambler and descrambler. Kloker teaches, in claim 1, that the synchronization data is combined with user data during scrambling to be transmitted from transmitter to receiver. During descrambling, on the receiver side, the synchronization data is returned to an unscrambled state, thus transmitting synchronization data from scrambler to descrambler.

Claims 26, 30, 39, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannering et al. as modified by Kloker, in view of Salava (U.S. Patent No. 3,586,776).

Mannering et al. as modified by Kloker, in view of Salava teaches the frame synchronization data is pseudo random (see figure 1 and column 1, line 74 through column 2, line 14 of Salava).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use pseudo random synchronization data, as taught by Salava to the data scrambler of Mannering et al. as modified by Kloker. It would have been obvious for this combination because pseudo random synchronization data incorporated into a data scrambler gives the randomness needed when scrambling data for secure transmission (see column 1, lines 7-31 of Salava).

Claims 35 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannering et al. as modified by Kloker, in view of Humphrey et al. (U.S. Patent No. 5,959,967).

Mannering et al. as modified by Kloker in view of Humphrey et al. teaches the multi-carrier transmission system employs OFDM (see figure 1, reference number 3 of Humphrey et al.).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ OFDM, as taught by Humphrey to the multi-carrier transmission system of Mannering et al. as modified by Kloker. It would have been obvious for this combination because OFDM incorporated into a multi-carrier transmission system allows a more cost effective approach for handling digital data over older lines without the need to replace them with newer, faster coaxial cables or the like (see column 1, lines 8-25 of Humphrey).

***Response to Arguments***

6. Applicant cancels claims 1-23, and adds claims 24-46.
7. Applicant argues:
  - a. Examiner used Applicants teachings as a roadmap to combine prior art (page 12, first and second paragraph).

Regarding Applicants argument, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the



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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon Hoffman whose telephone number is 703-305-4662. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Brandon Hoff*

BH  
1/9/04

*Emmanuel L. Moise*  
EMMANUEL L. MOISE  
PRIMARY EXAMINER